AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-49 (cancelled)

50. (new) A method for indicating a deviation in an analyzable material according to a wavelength, c h a r a c t e r i z e d in that the method comprises:
dispersing the light produced by a light source to the surface of the analyzable moving planar material as overlapping spectrums in a first and a second direction such that the first and the second direction are essentially perpendicular to one another and that the spectrums dispersed in the first and the second direction are formed of different wavelength areas ;
collecting the spectrums reflected from the surface of the analyzable moving planar material with at least one lens to a focal point;
guiding the spectrums collected to the focal point by at least one optic fibre into a spectrum camera;
comparing the spectrums guided into the spectrum camera to a predetermined reference spectrum; and
defining the location of one or more deviations in the analyzable material on the basis of the comparison.

51. (new) A method according to claim 50, c h a r a c t e r i z e d in that the method uses a set of measurement modules, each one of which contains the necessary optic components, wherein the method comprises:

guiding the light produced by the light source by the first connection into each measurement module;
dispersing the light produced by the light source to the surface of the analyzable material as overlapping spectrums in a first and a second direction such that using the light dispersed through each measurement module a particular portion of the area to be analyzed is covered;
collecting the spectrums reflected from the surface of the analyzable material with the lens of each measurement module to the focal point of the lens; and
guiding the spectrums collected to the focal point into a spectrum camera by at least one optic fibre.

52. (new) A method according to claim 51,
c h a r a c t e r i z e d in that the method further comprises a step of: moving the measurement bar, to which is attached a set of measurement modules.

53. (new) A method according to claim 50,
c h a r a c t e r i z e d in that the analyzable material is wood, paper, fabric, metal or plastic.

54. (new) A method according to claim 50,
c h a r a c t e r i z e d in that the method further comprises the steps of:
analyzing the data gathered by the spectrum camera; and
defining the location of a deviation in the analyzed material on the basis of spatial and spectral components of the pixel of the spectrum camera.

55. (new) A method according to claim 50,
c h a r a c t e r i z e d in that measurement is calibrated according to the light source such that:

the reference point of the analyzable material is lit directly without dispersing the light produced by the light source as at least one spectrum;
collecting a reference spectrum from the light reflected from the surface of the reference point of the analyzable material; and
defining a spectral distribution of the light source from the reference spectrum.

56. (new) A method according to claim 50,
c h a r a c t e r i z e d in that measurement is calibrated according to the light source such that:
dispersing the light produced by the light source as several spectrums to the surface of the reference point of the analyzable material;
collecting a reference spectrum from the light reflected from the surface of the reference point of the analyzable material; and
defining a spectral distribution of the light source from the reference spectrum.

57. (new) A method according to claim 56,
c h a r a c t e r i z e d in that the reference spectrum is averaged and/or median filtered on the basis of new spectral measurements.

58. (new) A method according to claim 50,
c h a r a c t e r i z e d in that the dispersion of the light is achieved with at least one prism and/or grating.

59. (new) A method according to claim 50,
c h a r a c t e r i z e d in that the collection of the spectrums is achieved with a cylinder lens.

60. (new) A system for indicating a deviation in an analyzable material according to a wavelength, c h a r a c t e r i z e d in that the system comprises:
an analyzable moving planar material (102, 200);
at least one light source (10);
at least one spectrum camera (16);
means (234, 236) for dispersing the light produced by the light source (10) to the surface of the analyzable material (102, 200) as overlapping spectrums in a first and a second direction such that the first and the second direction are essentially perpendicular to one another and that the spectrums dispersed in the first and the second direction are formed of different wavelength areas;
means (238) for collecting the spectrums reflected from the surface of the analyzable moving planar material with at least one lens to a focal point;
means (226, 242) for guiding the spectrums collected to the focal point into the at least one spectrum camera (16);
means (106) for comparing the spectrums guided into the spectrum camera to a predetermined reference spectrum; and
means (106) for defining the location of one or more deviations in the analyzable material on the basis of comparison.

61. (new) A system according to claim 60, c h a r a c t e r i z e d in that the system comprises a set of measurement modules, and that:
each measurement module comprises a first connection (240, 244), with which the light produced by the light source (10) is guided into each measurement module;
each measurement module comprises means (234, 236) for dispersing the light produced by the light source to the surface of the analyzable material (102, 200) as overlapping spectrums in a first and a second direction such that using

the light dispersed through each measurement module a particular portion of the area to be analyzed is covered; each measurement module comprises means (238) for collecting the spectrums reflected from the surface of the analyzable material to the focal point of the lens contained in each measurement module; and
each measurement module comprises a second connection (242), to which is connected at least one optic fibre (226) which is arranged to connect the measurement module to the at least one spectrum camera (16) for guiding the spectrums collected to the focal point into the at least one spectrum camera (16).

62. (new) A system according to claim 60, c h a r a c t e r i z e d in that the measurement module (218) comprises the first orientation means, with which the means (234, 236) for dispersing are oriented to disperse the light produced by the light source (10) as a spectrum to the desired area surface of the analyzable material (102, 200).

63. (new) A system according to claim 60, c h a r a c t e r i z e d in that the measurement module (218) comprises the second orientation means, with which the means (238) for collecting are oriented to collect the spectrum reflected from the analyzable material (102, 200) from the desired area of the material (102, 200).

64. (new) A system according to claim 60, c h a r a c t e r i z e d in that the system further comprises a measurement bar (100), to which the measurement modules (218) are attached.

65. (new) A system according to claim 60, c h a r a c t e r i z e d in that the system further comprises means for moving the measurement bar (100).

66. (new) A system according to claim 60, c h a r a c t e r i z e d in that the analyzable material (102, 200) is wood, paper, fabric, metal or plastic.

67. (new) A system according to claim 60, c h a r a c t e r i z e d in that the data processing device (106) is arranged to analyze the data gathered by the spectrum camera (16) and define the location of a deviation in the analyzed material (102, 200) on the basis of the spatial and spectral components of the pixel of the spectral camera (16).

68. (new) A system according to claim 60, c h a r a c t e r i z e d in that the system further comprises means for locating dispersion means (110) to the side such that the analyzable material is lit directly for measurement of a reference spectrum from the reference point of the analyzable material.

69. (new) A system according to claim 60, c h a r a c t e r i z e d in that the means (234, 236) for dispersing the light comprises at least one prism and/or grating.

70. (new) A system according to claim 60, c h a r a c t e r i z e d in that the means (238) for collecting the spectrums comprise a cylinder lens.

71. (new) A measurement bar for analyzing the material, c h a r a c t e r i z e d in that the measurement bar (100) comprises at least one measurement module (218); each measurement module comprises:
means (234, 236) for dispersing the light produced by the light source (10) to the surface of the analyzable material

(102, 200) as overlapping spectrums in a first and a second direction such that the first and the second direction are essentially perpendicular to one another and that the spectrums dispersed in the first and the second direction are formed of different wavelength areas;
means (108, 238) for collecting the spectrums reflected from the surface of the analyzable moving planar material (102, 200) with at least one lens contained in each measurement module to a focal point; and
means (226, 242) for guiding the spectrums collected to the focal point into the at least one spectrum camera (16).

72. (new) A measurement bar according to claim 71, c h a r a c t e r i z e d in that each measurement module (18) comprises:
a first connection (240, 244), with which the light produced by the light source (10) is guided into each measurement module;
means (234, 236) for dispersing the light produced by the light source to the surface of the analyzable material (102, 200) as overlapping spectrums in a first and a second direction such that using the light dispersed through each measurement module a particular portion of the area to be analyzed is covered;
means (238) for collecting the spectrums reflected from the surface of the analyzable material to the focal point of the lens contained in each measurement module; and
a second connection (242), to which is connected at least one optic fibre (26) which is arranged to connect the measurement module to the spectrum camera (16) for guiding the spectrums collected to the focal point into the spectrum camera (16).

73. (new) A measurement bar according to claim 72, c h a r a c t e r i z e d in that the measurement bar (100) is arranged to be moveable.

74. (new) A measurement bar according to claim 72, c h a r a c t e r i z e d in that the measurement bar (100) is arranged above the analyzable material.

75. (new) A measurement bar according to claim 72, c h a r a c t e r i z e d in that the measurement module (218) comprises means for locating dispersion means (110) to the side such that the analyzable material is lit directly for measurement of a reference spectrum from the reference point of the analyzable material.

76. (new) A measurement bar according to claim 72, c h a r a c t e r i z e d in that the measurement module (218) comprises the first orientation means, with which the means (234, 236) for dispersing are oriented to disperse the light produced by the light source (10) as a spectrum to the desired area surface of the analyzable material (102, 200).

77. (new) A measurement bar according to claim 72, c h a r a c t e r i z e d in that the measurement module (218) comprises the second orientation means, with which the means (238) for collecting areoriented to collect the spectrum reflected from the analyzable material (102, 200) from the desired area of the material (102, 200).

78. (new) A measurement bar according to claim 72, c h a r a c t e r i z e d in that the means (234, 236) for dispersing the light comprise at least one prism and/or grating.

79. (new) A measurement bar according to claim 72, c h a r a c t e r i z e d in that the means (108, 238) for collecting the spectrums comprise a cylinder lens.

80. (new) A measurement module for analyzing the material, c h a r a c t e r i z e d in that the measurement module (218) comprises:
means (234, 236) for dispersing the light produced by the light source (10) to the surface of the analyzable material (102, 200) as overlapping spectrums in a first and a second direction such that the first and the second direction are essentially perpendicular to one another and that the spectrums dispersed in the first and the second direction are formed of different wavelength areas;
means (108, 238) for collecting the spectrums reflected from the surface of the analyzable moving planar material (102, 200) with at least one lens contained in each measurement module to a focal point; and
means (226, 242) for guiding the spectrums collected to the focal point into at least one spectrum camera (16).

81. (new) A measurement module according to claim 80, c h a r a c t e r i z e d in that the measurement module (218) comprises:
a first connection (240, 244), with which the light produced by the light source (10) is guided into each measurement module;
means (234, 236) for dispersing the light produced by the light source to the surface of the analyzable material (102, 200) as overlapping spectrums in a first and a second direction such that using the light dispersed through each measurement module a particular portion of the area to be analyzed is covered;

means (238) for collecting the spectrums reflected from the surface of the analyzable material to the focal point of the lens contained in each measurement module; and
a second connection (242), to which is connected at least one optic fibre (26) which is arranged to connect the measurement module to the spectrum camera (16) for guiding the spectrums collected to the focal point into the spectrum camera (16).

82. (new) A measurement module according to claim 81, c h a r a c t e r i z e d in that the measurement module (218) comprises means for locating dispersion means (110) to the side such that the analyzable material is lit directly for measurement of a reference spectrum from the reference point of the analyzable material.

83. (new) A measurement module according to claim 80, c h a r a c t e r i z e d in that the measurement module (218) comprises first orientation means, with which the means (234, 236) for dispersing are oriented to disperse the light produced by the light source (10) as a spectrum to the desired area surface of the analyzable material (102, 200).

84. (new) A measurement module according to claim 80, c h a r a c t e r i z e d in that the measurement module (18) comprises the second orientation means, with which the means (238) for collecting are oriented to collect the spectrum reflected from the analyzable material (102, 200) from the desired area of the material (102, 200).

85. (new) A measurement module according to claim 80, c h a r a c t e r i z e d in that the means (234, 236) for dispersing the light comprise at least one prism and/or grating.

86. (new) A measurement module according to claim 80, c h a r a c t e r i z e d in that the means (108, 238) for collecting the spectrums comprise a cylinder lens.